

ANALYSIS REPORT

Lab #: 379761 Job #: 22835 IS-64384
 Sample Name/Number: 752831 Szwaja
 Company: Colorado Oil & Gas Conservation
 Date Sampled: 9/11/2013
 Container: Dissolved Gas Bottle
 Field/Site Name: TBAL
 Location:
 Formation/Depth:
 Sampling Point:
 Date Received: 9/12/2013 Date Reported: 10/02/2013

Component	Chemical mol. %	$\delta^{13}\text{C}$ ‰	δD ‰	$\delta^{18}\text{O}$ ‰
Carbon Monoxide -----	nd			
Helium -----	na			
Hydrogen -----	nd			
Argon -----	1.35			
Oxygen -----	24.16			
Nitrogen -----	73.54			
Carbon Dioxide -----	0.49	-21.6		
Methane -----	0.457			
Ethane -----	0.0010			
Ethylene -----	nd			
Propane -----	nd			
Propylene -----	nd			
Iso-butane -----	nd			
N-butane -----	nd			
Iso-pentane -----	nd			
N-pentane -----	nd			
Hexanes + -----	0.0003			
Water -----			-81.6	-10.30
Dissolved Inorganic Carbon -		-13.5		

Remarks:

Analysis is of gas extracted from water by headspace equilibration. Analysis has been corrected for helium added to create headspace. Helium dilution factor = 0.70

*Addition of helium negates the ability to detect native helium and may negate the ability to detect hydrogen.

** Carbon dioxide isotopes obtained online via GC-C-IRMS

nd = not detected. na = not analyzed. Isotopic composition of hydrogen is relative to VSMOW. Isotopic composition of carbon is relative to VPDB. Isotopic composition of oxygen is relative to VSMOW, except for carbon dioxide which is relative to VPDB. Calculations for BTU and specific gravity per ASTM D3588. Chemical compositions are normalized to 100%. Mol. % is approximately equal to vol. %.